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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/049,589

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Jaakko Vihriala

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EXAMINER

RYMAN, DANIEL J

ART UNIT

PAPER NUMBER

2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/049,589

Applicant(s)

VIHRIALA, JAAKKO

Examiner

Daniel J. Ryman

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 26 February 2007 have been fully considered but they are not persuasive. On page 6 of the Response, Applicant asserts that in Dahlman "a known delay is used, and no 'search strategy' is employed in the sense detailed in the present specification." Examiner, respectfully, disagrees. Dahlman discloses that the relative time differences (RTDs) are *estimates*, (Dahlman: col. 6, lines 3-18), where the level of uncertainty with respect to the RTD estimate will vary with time (Dahlman: col. 7, lines 27-45). Dahlman also discloses that the mobile station "initiate[s] a primary cell-search using a conventional matched filter arrangement" using "the a priori neighbor cell RTD estimate (timing) information." (Dahlman: col. 6, lines 60-64). Here a "cell-search generally refers to a procedure whereby an MS accomplishes chip-, slot- and frame-synchronization with a BS." (Dahlman: col. 2, lines 22-24). Therefore, Dahlman makes very clear that the RTD is merely an estimate of the propagation delay which the mobile station uses to initiate a search for the actual propagation delay. See also Dahlman: col. 6, lines 31-35 (the MS sends an "improved estimate of the RTD" back to the source BS, which implies that the original estimate, i.e. the start propagation delay, is used to find the improved estimate, i.e. the actual propagation delay).
2. On page 7 of the Response, Applicant further emphasizes Applicant's position that "Dahlman does not describe a search strategy." Again, Examiner, respectfully, disagrees. Dahlman teaches using the estimated RTD to perform a "primary cell-search using a conventional matched filter arrangement." (Dahlman: col. 6, lines 60-64). Dahlman also discloses that the mobile station will vary the search window based on the level of uncertainty in

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the RTD estimate. (Dahlman: col. 7, lines 39-45). Thus, Dahlman clearly discloses that a search is performed.

3. On page 8 of the Response, Applicant asserts that “the idea underlying Papasakellariou is not related to the present application” since Papasakellariou is concerned with “fast acquisition of the BS pilot, and the BS does not gather information on the delays where the handover took place.” Examiner, respectfully, maintains that both Applicant’s cited prior art in view of Dahlman and Papasakellariou deal with search windows. As such, one of ordinary skill in the art of search techniques in mobile communication systems would have known about the procedures in Papasakellariou and thus combined the teachings of Papasakellariou with those of Applicant’s cited prior art in view of Dahlman.

4. In view of the foregoing, Examiner maintains that the claims are obvious in view of the cited prior art.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-6, 9-14, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant’s admitted prior art in view of Dahlman et al. (USPN 6,526,039), of record.

7. Regarding claims 1, 9, and 17, Applicant discloses as prior art a method comprising performing synchronization of a mobile network device to a network control device of a present radio network region (p. 3, lines 5-28, where propagation delay is important for performing

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synchronization), the method further comprising: detecting that a handover from a source radio network region to said present radio network region has been performed (p. 2, line 33-p. 3, line 34, where a current base station implicitly detects that a handover has occurred from a source cell to itself since the current base station thereafter begins to communicate with the mobile station, e.g. the current base station communicates the TA to the mobile where the TA is based on the propagation time between the base station and the mobile); determining a start propagation delay value (p. 2, line 33-p. 3, line 34, where any search will start with an initial value, see also p. 4, lines 25-34); and searching an actual propagation delay value by using a search strategy based on said determined start propagation delay value (p. 2, line 33-p. 3, line 34 and p. 4, lines 25-34, where the current base station searches for the propagation delay value using minimum propagation delay and a maximum propagation delay for a cell).

Applicant does not admit as prior art detecting a source radio network region from which a handover of said mobile network device to said present radio network region has been performed and determining the start propagation delay value based on said detected source radio network region of said mobile station. Dahlman teaches, in a system for performing a delay search for synchronization purposes, detecting a source radio network region from which a handover of said mobile network device to said present radio network region has been performed (col. 6, lines 3-18, where the BSC stores a table containing a list of the delays between a source BS and neighboring BSs, such that any use of this information requires knowledge of the source BS and the neighboring BS, i.e. the current BS of Applicant, see also col. 2, lines 11-15) and determining the start delay value based on said detected source radio network region of said mobile station (col. 6, lines 25-36, where the start delay value is determined based on the source

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and current base station and then used when performing a search). Dahlman discloses that using a start delay value based on a detected source radio network region when performing a search reduces search time (col. 5, lines 3-11). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the delay information of Dahlman in the network of Applicant's admitted prior art by detecting a source radio network region from which a handover of said mobile network device to said present radio network region has been performed and determining the start propagation delay value based on said detected source radio network region of said mobile station in order to reduce propagation delay search time..

8. Regarding claims 2 and 10, Applicant's admitted prior art in view of Dahlman discloses that start propagation delay values are stored in a database for a plurality of adjacent sectors (Dahlman: col. 4, lines 30-47, see also col. 6, lines 3-18).

9. Regarding claims 3 and 11, Applicant's admitted prior art in view of Dahlman discloses updating said database with said searched actual propagation delay value after performing said search step (Dahlman: col. 6, lines 14-18, see also col. 6, lines 31-36).

10. Regarding claims 4 and 12, Applicant's admitted prior art in view of Dahlman discloses that one start propagation value is stored for each adjacent sector (Dahlman: col. 4, lines 30-47, where "one start propagation value" is interpreted to mean "at least one" rather than "only one," see also col. 6, lines 3-18).

11. Regarding claims 5 and 13, Applicant's admitted prior art in view of Dahlman discloses that for each adjacent sector the estimate is updated using a plurality of start propagation values (col. 6, lines 14-18, see also col. 6, lines 31-36). Applicant's admitted prior art in view of Dahlman does not expressly disclose using an average of said plurality of start propagation

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values as a basis for said search strategy. However, Examiner takes official notice that averaging is a well-known mechanism for combining a plurality of estimates into a single estimate. As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an average of said plurality of start propagation values as a basis for said search strategy.

12. Regarding claims 6 and 14, Applicant's admitted prior art in view of Dahlman discloses that a distribution of said plurality of start propagation values is also used as the basis for said search strategy (Dahlman: col. 6, lines 3-18, where the database is distributed to the device which is going to use the estimate to perform the search).

13. Regarding claim 18, Applicant's admitted prior art in view of Dahlman discloses that the means for detecting comprises a source cell detector (Applicant: p. 2, lines 2-14, where the BSC, as broadly defined, has a "source cell detector" since it knows which cell is the source cell, see also Dahlman: col. 6, lines 14-25); the means for determining and the means for searching comprise a controller coupled to a memory (Dahlman: col. 6, lines 56-67, where the device that controls the actions of the mobile station is, as broadly defined, a "controller" and where the controller is coupled to a memory that stores the neighbor cell list information).

14. Claims 7, 8, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Dahlman et al. (USPN 6,526,039), of record, as applied to claims 1 and 9 above, and further in view of Papasakellariou et al. (USPN 6,275,483), of record.

15. Regarding claims 7, 8, 15, and 16, Applicant's admitted prior art in view of Dahlman does not expressly disclose that said search strategy is expanding window or z-search; however, Applicant's admitted prior art in view of Dahlman does disclose that the time-search

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window can vary (Dahlman: col. 7, lines 39-45, where the time-search window is modified based on the level of uncertainty of the RTD estimate). Papasakellariou teaches, in a mobile communication system, that expanding window and z-search are conventional search techniques to search a search window (col. 5, lines 31-34). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to search the search window of Applicant's admitted prior art in view of Dahlman by using expanding window or z-search, which are conventional search techniques.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tiedemann, Jr. et al. (US 2001/0021179) see entire document which pertains to enabling faster acquisition of a system after handoff.

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel J. Ryman
Examiner
Art Unit 2616

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